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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/771,439	01/26/01	MATSUMOTO	K TOYAM67.001A

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EXAMINER

ZITOMER, S

ART UNIT	PAPER NUMBER
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1655

DATE MAILED:

06/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
**09/771,439**

Applicant(s)

**MATSUMOTO**

Examiner  
**Stephanie Zitomer**

Art Unit  
**1655**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Apr 16, 2001
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

#### Rejections under 35 U.S.C. 112, second paragraph: Indefiniteness

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) The recitation "two or more kinds of single-stranded nucleic acids" is confusing because it is unclear whether it means RNA, DNA, ZDNA, etc. or nucleic acids having different nucleotide sequences.

(b) The recitation "single-stranded nucleic acids complementary to the immobilized nucleic acids" is confusing because the antecedent basis is unclear. It is suggested to indicate that the complementary nucleic acids are in the sample solution.

(c) The recitation "according to immobilized portions" is confusing because the antecedent basis is unclear. Claim 1 does not establish that the substrate has "immobilized portions" and the meaning of "according to" is unclear.

(d) The recitation "separating the hybridized single-stranded nucleic acids" is confusing because it is unclear whether it means denaturing the hybridized nucleic acids into single strands or removing the nucleic acids in their hybridized form from the substrate.

(e) The recitation "to collect the hybridized single-stranded nucleic acids..." is not an active method step as it should be but it is simply a statement of future intended use. Method claims need not recite all operating details but should at least recite positive, active steps so that the claims will set out and circumscribe a particular area with a reasonable degree of precision and particularity and make clear what subject matter the claims encompass as well as make clear the subject matter from which others would be precluded. *Ex parte Erlich*, 3 USPQ2d 1011 at 6.

(f) The recitation "plate-like shape" renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "like"), thereby rendering the scope of the claims unascertainable. See M.P.E.P. § 2173.05(d).

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Furthermore, "plate" may have a variety of shapes and alternatively may refer to a flat surface. The recited phrase is not defined in the claims or in the specification. It is suggested to recite the specific intended shape.

**Rejection under 35 U.S.C. 102(e): Anticipation**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1 and 3-8 are rejected under 35 U.S.C. 102(e) as being anticipated by the patent to Mills, Jr. et al. (6,150,102). The claimed invention method is disclosed by Mills, Jr. et al. as follows: a step of hybridizing single-stranded nucleic acids in a sample solution with single-stranded nucleic acids of two or more different nucleotide sequences immobilized at discrete locations ("depots") on a substrate (column 7, lines 46-62; column 12, lines 28-32) and separating and collecting the hybridized sample nucleic acids from discrete locations (column 13, line 15-column 15, line 15; column 25, claim 1). Regarding the embodiment of claims 3 and 4 wherein the immobilized nucleic acid is DNA the patent teaches that the immobilized nucleic acid is DNA (column 25, claim 2). Regarding the embodiment of claims 5-8 wherein the substrate has a "plate-like" shape, "plate-like" is interpreted as a flat surface such as glass or a silicon wafer as disclosed in the patent (column 8, lines 12-20; column 10, lines 4-5).

**Rejection under 35 U.S.C. 103(a): Obviousness**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mills, Jr. et al. (6,150,102) as applied to claims 1 and 3-8 above in view of Takenishi et al. (6,017,742). The claimed invention method of claim 2 differs from that of Mills, Jr. et al.

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wherein the substrate carries a compound having a carbodiimide group. However, Takenishi et al. teach a method of immobilizing nucleic acids on a substrate carrying a carbodiimide group wherein the substrate may be a plate (column 3, lines 52-67; column 11, Example 10). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the Takenishi et al. plate carrying a carbodiimide in the method of Mills, Jr. et al. because the skilled practitioner in the art would have been motivated by the routine practice in the art of using carbodiimide chemistry for immobilizing biological molecules on a substrate and by the advantages of ease of handling, reactivity and adhesiveness taught by Takenishi et al. (column 2, lines 39-49; column 3, lines 22-24).

#### Conclusion

4. **No claim is allowed.**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephanie Zitomer whose telephone number is (703) 308-3985. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (703) 308-1152. The official fax phone number for this Group is (703) 308-4242. The unofficial fax number is (703) 308-8724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

  
Stephanie Zitomer, Ph.D.

June 26, 2001

STEFANIE ZITOMER, Ph.D.  
Examiner